



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/544,212	08/02/2005	Kazuhiro Fukae	TAM-057	8443
20374	7590	10/05/2007		
KUBOVCIK & KUBOVCIK SUITE 710 900 17TH STREET NW WASHINGTON, DC 20006			EXAMINER ARIANI, KADE	
			ART UNIT	PAPER NUMBER
			1651	
			MAIL DATE	DELIVERY MODE
			10/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/544,212	Applicant(s) FUKAE, KAZUHIRO	
	Examiner Kade Ariani	Art Unit 1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

The preliminary amendment filed on August 02, 2005, has been received and entered.

Claims 1-12 are pending in this application and were examined on their merits.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koketsu et al. (The Journal of Food Science, 1993, Vol. 58, No. 4, p.743-747) and Inazu et al. (in IDS, Peptide Science 1998, M. Kondo Edition, p. 153-156) and in view of Yamamoto, K. (Journal of Bioscience and Bioengineering, 2001, Vol. 92, No. 6, p.493-501).

Claims 1-12 are drawn to a process for preparing asparagine-linked oligosaccharide derivatives including the steps of (a) treating a delipidated egg yolk with a protease (b) treating with a peptidase to obtain a mixture of asparagine-linked oligosaccharides, (c) introducing a lipophilic protective group into the asparagine-linked oligosaccharides, and (d) subjecting the mixture of asparagine-linked oligosaccharide

Art Unit: 1651

derivatives to a fractionating chromatography using a reverse phase column to separate the mixture, delipidating an avian egg yolk with an organic solvent, penta- (hepta-, nona-) to undecasaccharide derivatives, the lipophilic protective group is a carbonate-containing group, the lipophilic protective group is Fmoc group, the asparagine-linked oligosaccharides obtained by step (b) are hydrolyzed before the subsequent step to cut off some sugar moieties, the asparagine-linked oligosaccharides obtained in the mixture by step (c) are hydrolyzed before the subsequent step to cut off some sugar moieties.

Koketsu et al. teach a process for preparing asparagine-linked oligosaccharide derivatives, treating an avian egg yolk with ethanol (organic solvent) to obtain delipidated egg yolk (DEY), and separating the mixture of oligosaccharides by reverse-phase column, the oligosaccharide derivatives are hydrolyzed to cut off some sugar moieties, and a undecasaccharide derivative (p.743, Abstract, and 2nd column, 3rd paragraph, lines 1-2, p. 744, 2nd column 4th paragraph, lines 1-5, p. 746, Figure 5, 3rd oligosaccharide derivative).

Inazu et al. teach a process for preparing asparagine-linked oligosaccharide derivatives, treating a egg with a protease (Pronase), introducing a lipophilic protective group into the asparagine-linked oligosaccharides, and subjecting the mixture of asparagine-linked oligosaccharide derivatives to a fractionating chromatography using a reverse phase column to separate the mixture, and a penta- to undecasaccharide derivatives (p. 153, Abstract and p. 154, figure 1.).

Moreover, Yamamoto teaches oligosaccharide moieties of some glycoconjugates have been shown to play important roles in biological phenomena such as cellular

recognition, lectin binding, and viral infection, among others. Progress in the field of glycobiology requires the synthesis of glycoconjugates to elucidate the significance and function of oligosaccharides. The synthesis of new oligosaccharide with additional functions by modification of naturally occurring oligosaccharides, and the addition of an oligosaccharide to a substance to give it a useful function are important subjects in glycotechnology (p. 493 Introduction 1st column, 1st paragraph).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Inazu et al. and Koketsu et al. and use delipidated egg yolk to provide a process for preparing asparagine-linked oligosaccharide derivatives. As disclosed in Yamamoto et al., the motivation for the combination would be to synthesize new oligosaccharide with additional functions by modification of naturally occurring oligosaccharides, and the addition of an oligosaccharide to a substance to give it a useful function.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kade Ariani whose telephone number is (571) 272-6083. The examiner can normally be reached on 9:00 am to 5:30 pm EST Mon-Fri.

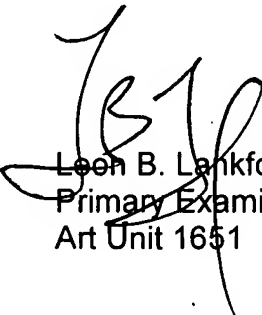
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on (571) 272-0926. The fax phone

Art Unit: 1651

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kade Ariani
Examiner
Art Unit 1651



Leon B. Lankford Jr.
Primary Examiner
Art Unit 1651